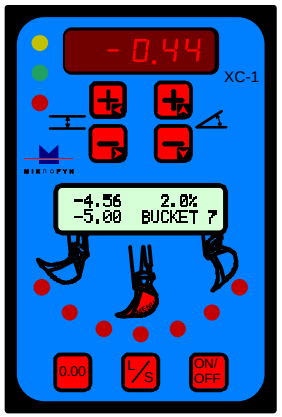
MIKROFYN

XC 1
User's Guide



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TEL.: INT +45 66 17 07 84 • FAX: INT +45 66 17 07 85

Depth Monitor XC 1

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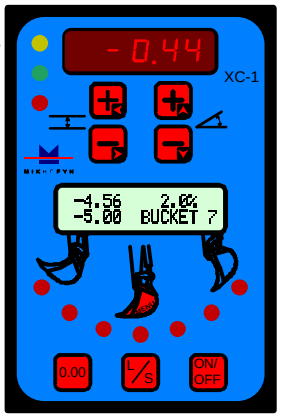
Operation Panel



- 0.44 Shows the remaining depth to On Grade pos.

Increases the depth of the excavation.

Decreases the depth of the excavation.

Increases the slope of the excavation.

Decreases the slope of the excavation.

Selection of bucket and entrance to MENU.
Press for 2 sec. to enter User MENU.

L/S Load and Store the position.

ON/ OFF Power **ON / OFF**.

0.00 Set On Grade position.
Press for 2 sec. to ZERO set the alarm depth.

Basic operation instructions

1. Push the ON/ OFF button.

2. Place the tip of the bucket on a reference point.

3. Push the 0.00 button to set the reference point.
The display will zero set the actual depth value.

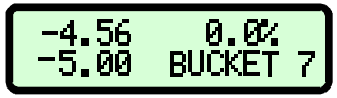
4. Push the 0.00 button for 2 sec. if you want to zero set the alarm depth.

Setting the alarm depth

1. Push the left or button until the display shows the value desired.

   Example: If you want to enter a depth of 5.0 m push the left button until the display shows the value -5.00.

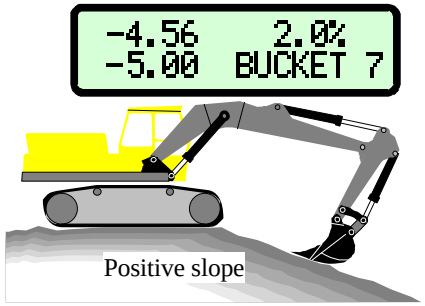
   The display to the right indicates:
   1. The actual depth is -4.56
   2. The alarm depth is -5.00
   3. The slope is 0.0% (no slope)
   4. The bucket selected is No. 7



Digging with slope

1. Push the right or button until the display shows the slope desired.

   Example: If you want a slope of 2%, where the excavation is getting shallower as the bucket comes nearer the excavator, push the right button until the display shows the value 2.0%.



Moving the excavator

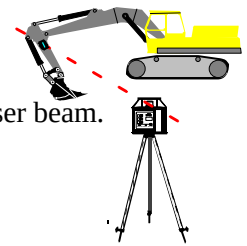
1. Put the bucket at a place that can be reached again after moving the excavator.
2. Push the L/S button to store the position.
   The red display will flash to indicate that the position is stored.

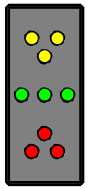
3. Move the excavator and put the bucket at the same place where the position above was stored.
4. Push the L/S button again to load the position.

Use of XC 1 with laser beam as reference

Basic operation instructions

1. Push the ON/OFF button.
2. Make sure that the rotation laser is activated.
3. Move the Laser Sensor, so that it can detect the laser beam.
   When the sensor detects the beam, the message
   NEW REF. @. 0.00
   PUSH THE L/S BUTTON
   is shown in the lower display and the message
   LASEr
   is shown in the upper red display.
   *When the sensor approaches the beam, the diodes in the small display will flash **slowly** in the direction in which the sensor is to be moved in order to detect the laser beam. When the diodes flash **quickly** the sensor is able to detect the beam.*





4. Push the L/S button to set the reference point.
   When the upper display flashes the message **LASEr**, *the reference point has been accepted.*
   The values of actual depth and alarm depth depends on the actual position of stick and bucket.

Setting the alarm depth

1. Push the left or button until the display shows the value desired.
   Note that the reference point is the laser beam.

   Example: If you want to enter a depth of 5.0m below the laser beam push the left button until the display shows the value -5.00.

   The display to the right indicates:
   1. The actual depth is -4.56
   2. The alarm depth is -5.00
   3. The slope is 0.0% (no slope)
   4. The bucket selected is No. 7

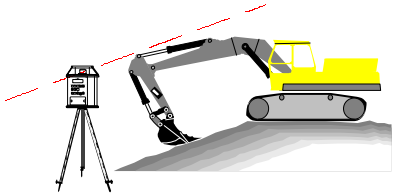
Use of XC 1 with laser beam as reference

Digging with slope

1. Push the right or button until the display shows the slope desired.

   Important: The slope you enter to the display, must always be the same as the slope of the rotation laser.

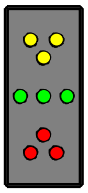
   Example: If you want a slope of 2%, where the excavation is getting shallower as the bucket comes nearer the excavator, push the right button until the display shows the value 2.0%.



Moving the excavator

1. Move the excavator to the desired location.

2. Move the Laser Sensor, so that it can detect the laser beam.
   When the sensor detects the beam, the message
   NEW REF. @. 0.00
   PUSH THE L/S BUTTON
   is shown in the lower display and the message
   LASEr
   is shown in the upper red display.
   *When the sensor approaches the beam, the diodes in the small display will flash **slowly** in the direction in which the sensor is to be moved in order to detect the laser beam. When the diodes flash **quickly** the sensor is able to detect the beam.*



3. Push the button to set the reference point.
   When the upper display flashes the message **LASEr**, *the reference point has been accepted.*
   The values of actual depth and alarm depth depend on the actual position of stick and bucket.

User Menu

To enter the User Menu: Push the MENU/BUCKET button and hold it down for about 2 seconds.

You select a menu option by pushing the left or button.
You change the value by pushing the right or button.

The User Menu contains the following menu options:

DATUM HEIGHT

This menu option is used to set the reference height when the 0.00 button is pressed.

MEASURE

With this menu option you can let the Depth Monitor XC 1 calculate slope, height, and length in relation to 2 reference points. You can choose which of the values is to be shown in the upper red display. Push the right or button to select the value.
To let the XC 1 calculate slope, height and length, follow this procedure:

1. Place the tip of the bucket on the first reference point.
2. Push the 0.00 button to save the first reference point.
3. Place the tip of the bucket on the second reference point.

The upper red display shows the slope, height or length according to which value you have selected.
If you want to work with the calculated slope, height and length, push the L/S button to save the second reference point.
After saving the second reference point, XC 1 automatically leaves the User Menu and returns to working mode.
There is no timeout at this menu option.

NULLING METHOD

This menu option is used to choose nulling method. You can choose between STANDARD, INTEGRATED LASER and EXTERN LASER.

For STANDARD, the method is as described in the Users Guide in the section "Moving the excavator without laser beam as reference".

For INTEGRATED LASER, the method is as described in the Users Guide in the section "Moving the excavator with laser beam as reference".

For EXTERN LASER, you must push the L/S button when the laser beam is in the middle of the extern laser sensor. This method is **only** used, when you use a sensor that is **not** an integral part of the XC 1 system.

User Menu

BEEP VOLUME
This menu option is used to set how loud the Main Display is to beep.
You can choose between off, low, normal and loud.

CONTRAST
This menu option is used to set the contrast in the display.
You can choose between values from 0 to 50. The standard value is 20.
The XC-1 has automatic contrast regulation; consequently you need not choose a high value.

LIGHT INTENSITY
This menu option is used to set the light intensity in the display.
You can choose between the values from 0 to 15.
The XC-1 has automatic light intensity regulation; consequently you need not choose a high value.

ALARM DEPTH
This menu option is used to set when the upper yellow arrow on the Small Display and the yellow diode on the Main Display start to light. The value is the distance from when the arrow and diode starts to light until when the green diodes start to light.

ON GRADE DEPTH
This menu option is used to set when the green diodes/diode, on the middle of the Small Display and the Main Display respectively, start to light. The value is the distance from when the green diodes start to light until when the red arrow and diode start to light.

ALARM HEIGHT
This menu option is used to set how high up the pivot points are allowed to get.
The value is the distance from the lowest pivot point.
You can save the value by moving the bucket to a desired alarm height and pushing the 0.00 button 0.00.

BUCKET DISP. ON
This menu option is used to set whether the display is to show the movements of the bucket.

UNITS ANGLE
This menu option is used to set in which unit the angle is measured.
You can choose between per cent, per thousand, gon, degrees or relative.

User Menu

CALIBRATE BUCKET
In order to calibrate the bucket sensor, you must input some information about the length and angles of the bucket to the XC 1 System.
Follow the instructions below to do so:

1. Connect the sensor to the Main Display.

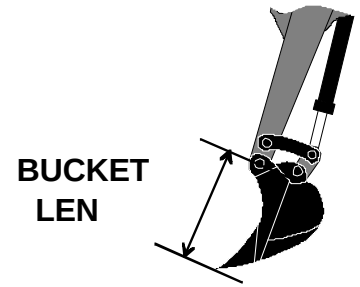
2. Turn on the Main Display.

3. Push the MENU/BUCKET button and hold it down for about 2 sec.
   You will now enter the User Menu.

4. Select the menu option **CALIBRATE BUCKET**.
   You select a menu option by pushing the left or button.

5. Push the right button to enter the menu option **CALIBRATE BUCKET.**

6. Measure the distance between the pivot point of the bucket and the edge of the bucket.



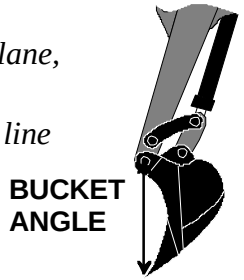
7. Push the right or button until the display shows the distance between the pivot point and the edge of the bucket (BUCKET LEN) that you measured in § 6.

8. Push the left button until the display shows **BUCKET ANGLE.**

User Menu

CALIBRATE BUCKET, continued

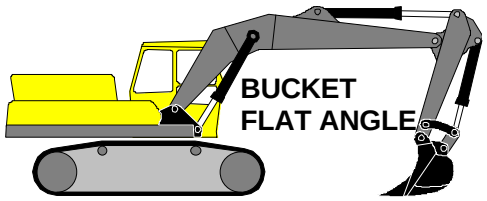
9. Move the bucket of the excavator to a position where the line between the pivot point of the bucket and the edge of the bucket is in a straight vertical plane.
   To make sure that the line is in a straight vertical plane, we recommend that you use a spirit level.
   In calm weather, it is also possible to hold a plumb line to the pivot point and let it hang straight down.
   Then move the bucket until the leading edge touches the string.



10. Push the 0.00 button when the bucket is in the position described above in § 9.

11. Push the left button until the display shows **BUCKET FLAT ANGLE**.

12. Move the bucket of the excavator to a position where the bucket can be used to level the surface evenly.
    This part of the calibration is used to set how the movements of the bucket are shown on the Main Display.
    The position you put the bucket into will correspond to the middle diode of the seven on the Main Display.



13. Push the 0.00 button when the bucket is in the position described above in § 12.
    The bucket sensor has now been calibrated.

14. Push the MENU/BUCKET button twice to leave the User Menu.

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XC 1

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